

October 3, 2006

Emily Waters  
c/o Law Office of Ian Mattoch  
Suite 1835, Pacific Guardian Center  
737 Bishop Street  
Honolulu, Hawaii 96813

**Re: Powell, Laughlin, et al. vs. City and County of Honolulu**

Dear Ms. Waters:

As you requested, I have reviewed the file material your office provided me concerning the drownings of Eric Powell and James Laughlin (i.e. referred to herein as the Powell/Laughlin incident) wherein both men drowned while snorkeling at Hanauma Bay. In addition, I also visited the site of the Powell/Laughlin incident wherein I made a number of observations concerning the Hanauma Bay area and beach including Witch's Brew, the area within Hanauma Bay where Mr. Powell and Mr. Laughlin drowned. It should be noted that I was familiar with Hanauma Bay prior to my inspection for the purposes of this matter in that I had snorkeled there on several occasions in the past. Based on this information, my training, experience, and expertise I conducted a Risk Management Analysis of the Hanauma Bay operations as it pertains to the Powell/Laughlin incident. My findings and conclusions are summarized below.

I base my findings and opinions on: my training, experience, and expertise in the field of Human Factors Engineering, the observations made at the time of my site inspection, as well as previous visits to Hanauma Bay, and the various file material pertaining to this case that your office provided. The material I reviewed and/or investigations undertaken that were specific to the facts of this case included:

1. Miscellaneous photographs taken by the Powells/Laughlin;
2. Map of Hanauma Bay;
3. Time Line;
4. Sun and Moon Data for July 19, 2002;
5. Weather History for July 19, 2002;
6. Surf Data for July 19, 2002;
7. Fire Department Incident Report;
8. Police Department Incident Report;
9. Autopsy Report for Mr. Powell;

10. Autopsy Report for Mr. Laughlin;
11. Miscellaneous Newspaper Articles;
12. Miscellaneous TV News Clips;
13. Video Tape of Hanauma Bay shot on 10/9/03;
14. Miscellaneous photographs of Hanauma Bay taken on 10/9/03;
15. Queen's Medical Center Records;
16. City and County of Honolulu's Response to Plaintiff's First Request for Production of Documents;
17. City and County of Honolulu's Response to Plaintiff's First Interrogatories;
18. City and County of Honolulu's Supplemental Response to Plaintiff's First Request for Production of Documents;
19. Ocean Safety and Lifeguard Service Division Supervisor's Report;
20. Deposition of Mrs. Powell;
21. Deposition of Mr. Bregman;
22. Deposition of Mr. Goodwin;
23. Deposition of Mr. Dorr;
24. Deposition of Mr. Moses;
25. Deposition of Mr. Neves;
26. Discussions with Dr. Lukas;
27. Discussion with Mr. Ebro;
28. Prior personal experience with Hanauma Bay;
29. Visitation/inspection of Hanauma Bay.

This report is based on the information that is available to date. It is my understanding that discovery is continuing in this matter, thus I reserve the right to further expand and/or amend my opinions and their bases if additional information relevant to my area of expertise becomes available.

Attached as an exhibit to this report is a copy of my CV that highlights my training, experience, and expertise as it pertains to safety and risk management, along with a list of my publications. Also attached is a listing of my sworn testimony for the past 5 years. Please note that my fees for work on this matter, including trial, is \$300/hour plus expenses; deposition fees are \$350/hour, unless paid in advance, with a minimum charge of \$1,000. Commercial travel time is billed at half-rate.

I have a Ph.D. in Mechanical Engineering – Human Factors Option; I have 30 years of experience in Human Factors with my emphasis being in safety and risk management. I have done theoretical work in the area of safety and specifically warnings, as well as provided consulting services to private industry and businesses in the field of safety and risk management. Also, as noted in my CV, I am board certified in Human Factors.

## **RISK MANAGEMENT ANALYSIS**

### **Overview**

In order to ensure the safety of visitors, the general public, and employees alike, a governmental agency such as the City and County of Honolulu must employ some type of basic safety or risk management program. To be effective at minimizing the potential

harm to people, any risk management program must be comprised of five basic components: Hazard Analysis, Plan Development, Plan Implementation, Plan Evaluation, and Documentation. Each of the steps and how they relate to Powell/Laughlin incident are discussed in the following sections.

### **Hazard Analysis**

A hazard analysis is a process whereby the various foreseeable tasks performed by the user (i.e. the manner in which the person interacts with the facility or system) are analyzed to identify potential hazards under the varying environmental conditions that exist where these tasks are accomplished. In the case of the Powell/Laughlin incident, the relevant tasks would be those associated with visitors that are swimming/snorkeling in the bay. In particular is the concern for drowning, particularly given that a vast majority of the visitors to Hanauma Bay are tourists with limited knowledge of ocean hazards, most of whom have limited, if any, snorkeling experience.

A hazard analysis is comprised of two key components: an a priori analysis (i.e. one that is performed before there is an accident or near miss) and a post hoc analysis (i.e. one that is performed after there is an accident or near miss). It is not the intent of this report to delve into the details of a comprehensive hazard analysis, nor would it be particularly fruitful to do so. Notwithstanding, the relevant issues as they pertain to the Powell/Laughlin incident for each type of analysis are:

#### *A Priori*

1. The initial view visitors have of Hanauma Bay is from high above the bay; from that distance the ocean, particularly in the bay area where people are swimming/snorkeling, the water/bay appears tranquil and peaceful. This reinforces a preexisting schema (i.e. mental model or expectation) that this is a public beach that should be safe for swimming/snorkeling.
2. As visitors descend to the beach area this schema is reinforced by several factors such as the large number of people who are swimming/snorkeling, the wide range of ages of people (i.e. from infants to the elderly) and the presence of lifeguards, including lifeguard towers.
3. The water in the immediate area of the beach is relatively calm and tranquil compared to the outer reef and areas such as Witch's Brew; however, unbeknownst to most visitors (i.e. mostly tourists) this is due to a number of factors such as the direction/magnitude of the winds, currents, and swells, as well as the protection afforded by the outer reef.
4. The presence of the lifeguard towers and lifeguards create a false sense of security.
5. When the water is choppy and rough such as the day of the Powell/Laughlin incident, the lifeguards cannot continuously observe swimmer/snorkelers as they are bobbing up and down in the water.

6. The significant number of prior drownings at Hanauma Bay put the City and County of Honolulu on notice of the hazardous conditions that were not being effectively mitigated. For example, in the 4 months prior to the Powell/Laughlin incident, there were 7 drownings in Hanauma Bay. To put that in perspective, there were a total of 7 drownings in all of Oahu's beaches staffed with lifeguards, less Hanauma Bay, in all of 2002.
7. Lifeguarding in Hanauma Bay is particularly challenging in that the most people are there to snorkel, an activity in which they lay face down in the water for extended periods of time and remain relatively motionless.
8. The large expanse of the bay both longitudinally (i.e. parallel to the beach) and particularly in depth (i.e. distance off the beach) contribute to the attraction to snorkel on the outer reef and sense of protection created by having shores on both sides.
9. Ms. Powell testified that she did not perceive any dangers or hazards associated with Hanauma Bay; this reinforces the fact that the hazards associated with Hanauma Bay are effectively hidden from the novice user.
10. Captain Soo acknowledged that visitors are attracted to Witch's Brew. DB ✓
11. Acting Captain Khrono noted that the Witch's Brew area has strong currents and is dangerous.
12. Via Dr. Lukas' analysis:
  - a. Once a swimmer/snorkeler gets into the Witch's Brew area, there are no good options for escape.
  - b. Even as an expert diver, he found it challenging to get back out of the Witch's Brew area.
  - c. Even on a surfboard he was afraid to venture into the end of Witch's Brew given the waves and current were so strong and erratic.
  - d. The hazard associated with Witch's Brew is not apparent.
13. Lifeguard Bregman testified that:
  - a. Hanauma Bay is a very challenging area to be a lifeguard.
  - b. Tourists are encouraged to go to Hanauma Bay and many are told they need not know how to swim.
  - c. Witch's Brew is dangerous if the trades are blowing or if there is a northeast swell (i.e. such as the day of the Powell/Laughlin incident).
14. Lifeguard Goodwin testified that:
  - a. Lifeguarding at Hanauma Bay is challenging as there are a lot of inexperienced people who are there to snorkel.
  - b. When the water is rough (i.e. such as the day of the Powell/Laughlin incident) the outer reef is closed because it is too hazardous. But as

discussed below, it is clear that the City and County of Honolulu failed to do so on the date of the Powell/Laughlin incident.

15. Lifeguard Dorr testified that:

- a. Hanauma Bay is difficult to lifeguard because it is crowded and all the swimmers are face down in the water.
- b. If the swimmer/snorkelers remain motionless for 30 seconds then a rescue is initiated.

Post Hoc

1. If a post hoc analysis is to be effective in improving safety it is absolutely mandatory that any and all accidents and/or near misses be thoroughly and properly investigated by trained and knowledgeable investigators. The investigations must be properly documented, including photographs and interviews of the victim(s), any/all potential witnesses, and in incidents such as drownings on a public beach there should be in-depth interviews of the lifeguards and rescue personnel. Lastly, the accident reports must be analyzed individually and then reviewed as a group to identify commonalities and potential patterns, by trained professionals to determine the root cause(s) of the accident(s).
2. It is absolutely critical that the underlying root cause(s) be identified so that corrective action can be implemented; falsely attributing the failure mode ensures that needless similar accidents will be repeated over and over. It should also be noted that this is a serial process from being to end; compromise any single step of the process and the overall process will fail. In this case, the evidence is irrefutable that City and County of Honolulu's risk management program failed at the very beginning. That is, in their answers to interrogatories, the City and County of Honolulu acknowledged that there was no post hoc investigation, not even an interview of any of the lifeguards that were on duty at the time of the Powell/Laughlin incident. The failure of City and County of Honolulu to have essentially no post hoc investigation/analysis program is a willful disregard for visitor safety. In effect, such a failure essentially constitutes a conscious and willful decision to repeatedly expose visitors to a known hidden hazard, knowing full well that some of them will become seriously injured and/or drown.

**Plan Development**

The goal of this step is to develop a plan or method for eliminating or at least minimizing the hazard. When generating or creating a plan, the safety and human factors profession uses a three-level hierarchical process, referred to as the Fundamental Principle of Safety.

The first tier or the best alternative is "Safety by Design". In short, this calls for alternative designs such that either the hazardous condition is eliminated or the user is removed/prohibited from the vicinity of the hazard (i.e. such as prohibiting visitors from venturing outside the inner reef, or swimming/snorkeling any closer than the approach to Witch's Brew). This is the first level of the hierarchical process because it is by far the most effective way of ensuring safety.

If for some reason Safety by Design is not possible or feasible, the second best alternative is "Guarding" or providing a barrier between the user and the potential hazard (i.e. such as the fence on the ledge that restricts access to Witch's Brew by land). However, it must be recognized that this second tier should only be employed when Safety by Design is not a viable alternative because it is not nearly as effective (i.e. the hazard still exists, guards are not fool proof).

The final tier is "Persuasion Control", using warnings, training, or other types of human intervention so as to "persuade" people to behave in a certain manner to ensure user safety. It is noted that for Persuasion Control to be effective it requires, first and foremost active participation on behalf of those who are in control of the hazard (i.e. in this case the City and County of Honolulu), as well as that of the user who is exposed to the hazard (i.e. the visitor to Hanauma Bay). Persuasion Control is the last tier of the hierarchical process because it is known to be limited in its effectiveness.

In this case it is not feasible to have removed the hazard associated with Witch's Brew; thus, the most effective plan would have focused on removing the user or Hanauma Bay visitor from the vicinity of the hazard. In this instance that would mean developing a protocol that would prevent people from accessing Witch's Brew either by land or water. If the City and County of Honolulu determines that this is not a viable option, then in accordance with the Fundamental Principle of Safety, Guarding must be employed (i.e. such as a fence along the ledge to restrict access by land).

If neither Safety by Design or Guarding is implemented, it becomes absolutely mandatory that the City and County of Honolulu develop a scientifically sound Persuasion Control system. Given the known limitation of any such system it is critical that trained professionals take a lead role not only in the development and implementation of such a system, but in its ongoing evaluation and refinements over time. In this instance, the City and County of Honolulu did take steps to implement Guarding with respect to access by land; however, when it came to access by water, only Persuasion Control was implemented and even then the plan was fundamentally flawed in several ways (i.e. see discussions below).

It is not the intent of this report to delve into an exhaustive discussion of all the relevant issues of developing a proper plan to control the hazard as it pertains to the Powell/Laughlin incident. Notwithstanding some of the more salient items include:

1. The key to effective lifeguarding is prevention first, rescue second. Effective prevention includes:
  - a. Site specific training, which was lacking.
  - b. Training regarding site specific hazards, which was lacking.
  - c. Emphasis on hazards that are hidden to the user, which was lacking.
  - d. The 10 second identification and 30 second response time rule (i.e. anyone in distress should be identified and a rescuer should be at their aid within 30 seconds) which was not met, particularly for swimmer/snorkelers in the area of the outer reef, much less Witch's Brew.

2. A lifeguard could have been "stationed" (i.e. on a surfboard, ocean kayak, jet ski, etc.) just outside the reef. Not only would this allow the City and County of Honolulu to have implemented Safety by Design (i.e. prevent access to the hazard), it would have also allowed for quicker response times to individuals needing emergency assistance, particularly those in the more dangerous areas of Hanauma Bay.
3. A powered megaphone/loudspeaker could have been installed to allow for effective and timelier communications/warnings between the lifeguards and swimmer/snorkelers; particularly those in the area of the outer reef and/or in transit to Witch's Brew.
4. Warning signs could have and should have been posted along the ledge at Witch's Brew, not only the land based approach, warning swimmer/snorkelers to stay clear of the hazardous ledge. This is critically important in that it is undeniable that some visitors will approach the area by water without having been afforded the opportunity to see the warning signs such as the ones posted on the fence on shore several hundred yards away that prohibit access by land. *relevant?*
5. Buoys could have been installed to mark dangerous areas and to restrict/warn swimmer/snorkelers from leaving the immediate area of the outer reef and traversing the water towards Witch's Brew.
6. Lifeguard Bregman testified that:
  - a. The lifeguards tell visitors how far they can swim based on conditions; yet, there was no infrastructure/protocol in place to do so.
  - b. If there was a strong current they would tell people not to go beyond the inner reef; however, this was done by posting a sign(s) that said nothing more than "Strong Current". Clearly the typical visitor/tourist would not know that this means that some arbitrary areas within the bay are dangerous and hence closed.
  - c. In 2002 there were only 4 lifeguards on duty, 2 for each tower; but as discussed below, this was a woefully inadequate and defective plan.
  - d. Each tower was assigned a specific area to monitor so as to reduce the workload for a given tower; yet as noted below this was not carried out.
  - e. The towers did not have visual access to the all of the water/shoreline within Witch's Brew.
7. Lifeguard Goodwin testified that:
  - a. They try to warn visitors as they can, but there are just too many and hence the lifeguards cannot warn everyone.
  - b. Tower 3A was assigned to monitor Witch's Brew, but it was approximately 400-500 yards away "as the crow flies" and 500-600 yards away by land (i.e. over 1/4 mile). Clearly this is a defective plan, particularly given the 10 second/30 second rule.
  - c. The towers did not have visual access to the all of the water/shoreline within Witch's Brew.

8. Lifeguard Dorr testified that:

- a. If a swimmer/snorkeler remains motionless for 30 seconds, then a rescue is initiated. Clearly, given the extremely large ratio of swimmer/snorkelers to lifeguards (i.e. as high as 1 lifeguard for every 500 swimmer/snorkelers), this is an impossible criteria to meet; more importantly, it violates the 10 second/30 second rule discussed above.
- b. There was no plan nor did they post any warning signs on the beach if an area such as the outer reef or Witch's Brew was closed.

9. Lifeguard Moses testified that:

- a. As the senior lifeguard at Hanauma Bay he did not believe that having only 4 lifeguards was enough; he noted that the US Lifeguarding Association recommends 1 lifeguard per 50 people.
- b. Even though the current number of lifeguards on duty has been increased to 6, he still does not believe that is sufficient to safely monitor Hanauma Bay.
- c. The towers were not assigned specific areas of the bay; when he was on duty in a tower, he would monitor the entire bay. It should be noted that this is contradictory to the testimony by Lifeguard Bregman discussed above. The point to be made is there was a breakdown in the implementation phase that compromised visitor safety. *How*

10. Lifeguard Neves testified that from the towers it is not possible to see the water side of Witch's Brew point.

### Implementation

Once the plan is developed, the next step is to communicate the required plan to all relevant employees from the highest supervisory level, all the way down to the employee performing the specific task or duty. Steps must be taken to ensure that the plan is implemented and enforced. Without active enforcement even the best plan becomes ineffective. For example, imagine the chaos that would ensue if there were not enforcement of traffic laws.

Here again, it is not the intent of this report to delve into an exhaustive discussion of all the relevant issues of the implementation phase as it pertains to Powell/Laughlin incident. The more salient items include:

1. The Powell Incident notes that the ocean condition was "rough" at the time of the drowning; thus according to Hanauma Bay protocol, the outer reef area and Witch's Brew should have been closed and no swimmer/snorkelers permitted in the area.
2. Lifeguard Bregman's statement form indicated that the ocean conditions were "rough"; he reiterated this in his deposition, testifying that he told visitors to stay inside the reef.

3. Lifeguard Neves testified that ocean conditions were "rough" on the day of the Powell/Laughlin incident (i.e. the outer reef area should have been closed) and that white water was washing over the ledge at Witch's Brew.
4. Lifeguard Dorr testified that the ocean was rough on the day of the Powell/Laughlin incident.
5. Ms. Powell testified that:
  - a. During the time she was there at Hanauma Bay there were numerous people snorkeling outside the reef.
  - b. On the way to get lunch at Hanauma Bay, she asked an employee how to swim out to the outer reef.
6. Captain Soo stated that on days when the ledge is fenced off (i.e. Witch's Brew is closed), such as the day of the Powell/Laughlin incident, the only way to access the area is by water. Yet, from the general area of the main beach (i.e. such as where Mr. Powell and Mr. Laughlin accessed the water), the fence and signs on the ledge that prohibit access to the Witch's Brew area are not visible/readable. Thus, visitors such as Mr. Powell and Mr. Laughlin would have no way of knowing the area is closed, particularly since there were no warning signs posted in the immediate area of Witch's Brew (i.e. the location of the hazard).
7. Lifeguard Bregman testified that buoys were supposed to be used to mark rough dangerous areas, but they were not up on the day of the Powell/Laughlin incident.
8. Lifeguard Goodwin testified that:
  - a. If he saw swimmer/snorkelers going to the outer reef when it was closed he would warn them with a megaphone and/or go after them on a board; yet this was not done on the day of the Powell/Laughlin incident.
  - b. If an area was closed (i.e. such as on the day of the Powell/Laughlin incident) a sign would be posted at snorkel rental shop. Not only is there no evidence that this was done on the day of the Powell/Laughlin incident, but this is inherently defective because many visitors bring their own equipment, hence they would never have the opportunity to see such a warning.
9. Lifeguard Moses testified that:
  - a. There was no protocol to post any warning or closed signs at the kiosk or snorkel rental shop if an area was closed.
  - b. He saw either Mr. Powell or Mr. Laughlin swim around Witch's Brew point yet he took no actions to intervene. It is noted that this is particularly disturbing since not only was Witch's Brew closed, the entire outer reef was closed. Clearly, Lifeguard Moses, the senior lifeguard on duty at the time, failed in the performance of his duties by not taking immediate action to protect Mr. Powell/Mr. Laughlin from the eminent danger towards which they were swimming.

- c. The buoys that were installed for visitor safety did not last and they were not replaced in a timely manner.

### **Evaluation**

The purpose of this step is to determine the effectiveness of the chosen plan for controlling the identified hazard. In short, "audits" or safety reviews are performed to verify the plan is being properly implemented and enforced. The evaluation process is essential to ensure that the chosen plan is effectively controlling potential hazards and is not introducing any new hazards.

Once again, it is not the intent of this report to delve into an exhaustive discussion of all the relevant issues of the evaluation phase as it pertains to the Powell/Laughlin incident, but the more salient items include:

1. Acting Captain Khrono, who acknowledged that the Witch's Brew area is dangerous, noted that people are advised not to swim there; however there was no infrastructure/protocol to provide such warnings given the large number of daily visitors (i.e. 1500 to 2000) with only 4 lifeguards.
2. Having only four lifeguards on duty was particularly unsafe given:
  - a. The lifeguards need to take rest breaks, lunch breaks, bathroom breaks and so forth.
  - b. Via the position description for the tower lifeguards, only 42% of their time is spent monitoring the water.
3. Dr. Lukas noted that there are no natural flows or currents from the reef area of Hanauma Bay to directly in front of Witch's Brew. As such, it would have taken a significant amount of time for Mr. Powell and Mr. Laughlin to swim from the inner reef area, out to the outer reef (i.e. which was allegedly closed on the date of the Powell/Laughlin incident), and then all the way over to Witch's Brew point. This is particularly noteworthy in that the on duty lifeguards should have had ample opportunity to have observed Mr. Powell and Mr. Laughlin swimming in a dangerous area (i.e. the outer reef) and swimming towards a more dangerous area (i.e. Witch's Brew) and then intervened.
4. Lifeguard Neves testified that:
  - a. Lifeguard Moses made many suggestions to improve visitor safety and none of them were implemented.
  - b. It was suggested prior to the Powell/Laughlin incident that more lifeguard towers be added to improve visitor safety.
  - c. Even with the current increase to 6 lifeguards, Hanauma Bay is still understaffed.

### **Documentation**

The final step in an effective risk management program is to document the safety process, including the plan, its implementation, and evaluation. Documentation is mandatory to

provide the infrastructure for controlling risks. It is also essential to ensure that there is accountability for the implementation and enforcement of the plan.

Again, it is not the intent of this report to delve into an exhaustive discussion of all the relevant issues of the documentation phase as it pertains to the Powell/Laughlin incident. Some examples where documentation is lacking include:

1. No formalized evaluation of the risks and hazards associated with Hanauma Bay.
2. No documentation of site specific training for the Hanauma Bay lifeguards.
3. No documentation regarding strategies/protocols to be followed by the lifeguards with respect to monitoring the swimmer/snorkelers in Hanauma Bay.
4. No documentation of the protocol to be followed when various ocean/environmental conditions occur and warrant specific proactive safety precautions such as closing the outer reef, Witch's Brew, and so forth.
5. No documentation of what if any signs were posted, where they would be posted, who would post them, and so forth.
6. No documentation regarding post hoc investigations.

### CONCLUSIONS

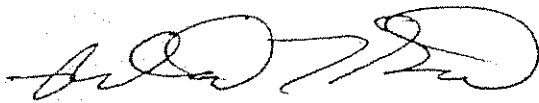
In summary, it is clear that the City and County of Honolulu needlessly exposed Mr. Powell and Mr. Laughlin, as well as any other reasonably prudent patron/visitor to a hazard that was known and preventable to the City and County of Honolulu, but likely hidden from the typical visitor to Hanauma Bay. At the very least, had the City and County of Honolulu had a rudimentary risk management program in effect, the needless and unreasonably dangerous conditions that led to the drowning deaths of both Mr. Powell and Mr. Laughlin would have been mitigated so as to have prevented these needless deaths.

It is particularly noteworthy that the City and County of Honolulu was on notice that Hanauma Bay represented a series drowning hazard to patrons of the park. As discussed above, there had been 7 other drownings in Hanauma Bay in the first half of 2002 prior to the Powell/Laughlin incident; it is unequivocal that the City and County of Honolulu should have developed additional safety measures (i.e. above and beyond those in effect in the first of half of 2002) to control such a deadly hidden hazard. Equally disturbing is the fact that had the City and County of Honolulu's lifeguards on duty on the day of the Powell/Laughlin incident properly implemented the existing safety protocol (i.e. the closing of the outer reef and Witch's Brew) Mr. Powell and Mr. Laughlin would not have drowned. The failure of the City and County of Honolulu to provide a reasonably safe facility was the root cause of Mr. Powell's and Mr. Laughlin's deaths.

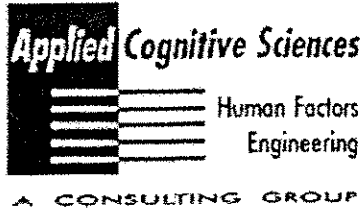
It is clear that neither Mr. Powell nor Mr. Laughlin did anything to negligently contribute to their deaths. They were both experienced swimmers and experienced snorkelers, in good health and physical condition. There is no reason to believe that either of them should not have been snorkeling that day; nor is there any reason to believe that either of them knowingly engaged in risky behavior or an unsafe act. Neither of them committed an error of omission nor an error of commission. In short, neither the actions/inactions of Mr. Powell and/or Mr. Laughlin were a contributing factor in their deaths.

Please let me know if you have any questions or if I can be of any further assistance. I look forward to working with you on this matter.

Sincerely,

A handwritten signature in black ink, appearing to read 'Richard Gill', with a stylized, flowing script.

Richard Gill, Ph.D., CHFP, CXLT  
President and Chief Scientist



January 8, 2007

Emily Waters  
c/o Law Office of Ian Mattoch  
Suite 1835, Pacific Guardian Center  
737 Bishop Street  
Honolulu, Hawaii 96813

**Re: Powell, Laughlin, et al. vs. City and County of Honolulu**

Dear Ms. Waters:

As you requested, subsequent to my initial report I have reviewed the report of Major Maceo concerning the drownings of Eric Powell and James Laughlin. The purpose of this letter is to briefly summarize my rebuttal to Major Maceo's report; I anticipate that at the time of trial my testimony would include the opinions expressed both in my initial report as well as those expressed in this rebuttal letter.

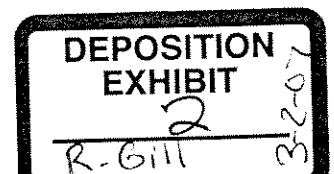
For the sake of expediency the format of this rebuttal letter will note the "Issue" and/or "Opinion" section from Major Maceo's report and the content therein to which I disagree. List below each such item is my rebuttal response.

**Opinion on Issue Two:** "...Witches Brew was not considered, and should not be considered, a guarded area."

- a. This is inconsistent with the testimony of the various City and County Water Safety Officers (WSO) that were deposed in this matter.
- b. This is inconsistent with Major Maceo's own interview of WSO Neves.
- c. As noted in Major Maceo's Issue Four discussions, WSO Moses recognized Mr. Laughlin as a swimmer in distress when he attempted to climb out at Witches Brew. Given the extraordinary hazards associated with Hanauma Bay (i.e. as discussed in my initial report), along with the extremely high swimmer/snorkeler to lifeguard ratio, one must ask why was WSO Moses wasting valuable scan time looking so far removed from the area he should have been monitoring.
- d. This is inconsistent with the closing of the land access to Witches Brew on the date of the incident.
- e. This is contrary to the basic principles of safety and risk management. Witches Brew was a known hazard on the date of the incident and thus warning signs were posted on the land access approach. However it was clearly foreseeable that swimmers/snorkelers such as Mr. Powell and Mr. Laughlin would not see such signs and would approach the area by water.

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- f. More importantly, as discussed in numerous places in my initial report there were several WSOs that testified that they monitor the water between the channel and Witches Brew, particularly if Witches Brew is closed such as it was on the date of Mr. Powell's and Mr. Laughlin's drowning.

**Opinion on Issue Three:** "...Hanauma Bay was staffed as adequately as it **could** have been" (Emphasis Added).

- a. There were only 4 WSOs on duty on the date of the Mr. Powell and Mr. Laughlin drowning.
- b. Without question there not only **could** have been additional WSOs, there **should** have been additional WSOs given the various known hazards as discussed in my initial report, as well as the numerous prior drownings at Hanauma Bay.

**Opinion on Issue Three:** "...a decline in attendance at Hanauma Bay prior to the Powell/Laughlin incident."

- a. This is contrary to the data in Major Maceo's own report (i.e. see Appendix 20).
- b. Notwithstanding, it would require a significant/large decline in attendance before any such decline would be relevant, particularly given the excessively high drowning rate at Hanauma Bay in the 6 months prior to Mr. Powell's and Mr. Laughlin's drowning.

**Issue Four:** "Mr. Laughlin did not show any signs of distress until he tried to climb the rock ledge."

- a. This completely misses the point. Witches Brew was closed because of the extremely hazardous conditions that existed that day.
- b. As noted by WSO Goodwin when he was interviewed by Major Maceo, the water around Witches Brew was rough, like a washing machine.
- c. Given these facts, Mr. Powell and Mr. Laughlin were approaching extreme danger the entire time they swam towards Witches Brew and were in extreme danger the entire time they were swimming/snorkeling in the general area of Witches Brew. The City and County WSOs most certainly should have responded to the impending catastrophe **before** Mr. Laughlin attempted to climb out of harms way. Again as noted above and as discussed in my initial report, several WSOs testified that not only do they monitor the water between the channel and Witches Brew, they warn and/or intercept (i.e. via surfboard) those that start to stray towards the Witches Brew area.

**Opinion on Issue Four:** "Hazards were identified and precautions taken..."

- a. As discussed at length in my initial report this is inconsistent with the facts of this case and contrary to basic safety and risk management principles.
- b. Worse yet, the hazards have still not been fully identified and proper precautions still have not been taken as evidenced by the opinions expressed, after the fact, by Major Maceo.

**Opinion on Issue Four:** "WSO Moses was extremely attentive in his visual surveillance."

- a. As discussed previously, Major Maceo claims that Witches Brew was **not** an area that was to be monitored by WSOs.

- b. If one accepts Major Maceo's assertion that Witches Brew was not an area that was to be monitored, given its remote location relative to the main area of Hanauma Bay that was supposed to be monitored, that would mean that WSO Moses was wasting valuable surveillance time (i.e. not being attentive to assignment) by watching an area to which he was not assigned to monitor.

**Opinion on Issue Four:** "...I would not have thought them a risk. Neither gentleman warranted attention while swimming the distance..."

- a. This opinion is very telling of why Major Maceo is not critical of the City and County.
- b. In his opinion, two men of unknown experience/swimming ability, in a bay where the overwhelming majority of swimmers are known not to be local, are hundreds of yards from the "safe" swimming area, are swimming directly towards an area that is closed because of hazardous water conditions, and yet Major Maceo does not believe they are at risk because "they were not showing any signs of distress".
- c. To use an analogy, if swimmers were drifting downriver and unbeknownst to them there was a dangerous waterfall just downstream, Major Maceo would not consider them at risk, at least not until they were attempting to climb up to safety right on verge of going over the falls.

**Opinion on Issue Four:** "...lifeguards responded to this particular incident in the most aggressive manner possible. You cannot look at the facts of this unfortunate incident, from the initial spotting of Mr. Laughlin..."

- a. With respect to the first portion of the statement, a simple (i.e. not even aggressive) and proper response from the WSOs would have been to have intercepted Mr. Powell and Mr. Laughlin well before they entered the dangerous waters of Witches Brew. It should be pointed out that when WSO Neves was interviewed by Major Maceo he opined that Mr. Powell and Mr. Laughlin swam across the entire width of Hanauma Bay from the Toilet Bowl area on the left side of the bay (i.e. as viewed when looking towards the ocean) in order to get to the Witches Brew area.
- b. With respect to the second portion of the statement, Major Maceo is absolutely right, yet that is what he has done in his analysis. The point to be made is quite simple: Major Maceo tries to argue that Mr. Powell and Mr. Laughlin were not in distress, and hence needed no attention/response from the WSOs until Mr. Laughlin tried to climb out of the deadly waters of Witches Brew. It is not surprising then that Major Maceo concludes the WSOs did the best they could. But that completely misses the point of pro-active safety.
- c. Consider the following analogy. What if "officers" of a school saw a pupil bring a gun on campus and yet did nothing, but once the pupil starting shooting, the officers quickly and aggressively responded. At issue is not the officers' response once the most acute consequences of the hazard began to unfold, but rather was there a breakdown in the system that failed to protect the public (i.e. the pupils or in this case the swimmers/snorkelers at Hanauma Bay). Major Maceo's analysis is woefully incomplete because it does not address the break down in the system that needlessly allowed Mr. Powell and Mr. Laughlin to be exposed to a known (i.e. to the City and County) but hidden (i.e. to Mr. Powell and Mr. Laughlin) hazard; rather, Major Maceo's analysis does not start until after Mr. Laughlin was

spotted attempting to rescue himself (i.e. climb up the rocks to get out of the deadly waters of Witches Brew).

**Opinion on Issue Five:** "You can post a million signs in an area the size of Hanauma Bay beach, and people will continue to walk right by them without even noticing they are there, much less reading them."

- a. Yet Major Maceo criticizes the Powell/Laughlin party (i.e. for example see the Issue Five Section of his report) for ignoring one or more warning signs that only stated "Warning Strong Current", without even specifying where such currents might be.
- b. Major Maceo is simply reiterating part of the underlying basis for the Fundamental Principle of Safety that was discussed in my initial report. Warnings (i.e. Persuasion Control) are only to be used as a last resort because they are known to be so ineffective. Yet, the only safety method that was in place to have protected the swimmers/snorkelers from the deadly waters of Witches Brew was just a few generic strong current signs.
- c. Again, Major Maceo's opinion is that it is perfectly fine to allow unknown members of the guarded public to swim into Witches Brew, even when it is closed due to hazardous conditions, and do nothing to stop them even though he knows that a "million signs" will not likely have any effect.

**Opinion on Issue Five:** "All preventive warnings and water safety recommendations available at Hanauma Bay on July 19, 2002 were visible to Mr. Powell and Mr. Laughlin as well as many other beach patrons."

- a. But these warnings were grossly defective; they were not consistent with requirements as set forth by the American National Standards Institute (i.e. ANSI Z 535.1 through Z 535.5).
- b. More importantly, by his own admission a million warning signs would not have made any difference; so what is the relevance of saying "all preventive and water safety recommendations available....were visible to Mr. Powell and Mr. Laughlin". Certainly, it can't be to criticize Mr. Powell and Mr. Laughlin, as it is known normal human behavior, even according to Major Maceo, that beach goers are not likely to perceive such information. But what it does mean is that since such signs were the only chance Mr. Powell and Mr. Laughlin had of being alerted to the hidden hazards of Witches Brew, the City and County did nothing to protect them until it was too late (i.e. Mr. Laughlin attempted a self-rescue).

**Opinion on Issue Five:** "The conditions present at Hanauma Bay that day....screamed "danger"....Witches Brew is 1000 yards from the nearest lifeguard stand...hazards of Witches Brew were in full view for all prudent beach patrons to see..."

- a. If the conditions "screamed danger" why is that Major Maceo opines earlier that if he had seen Mr. Powell and Mr. Laughlin swimming towards Witches Brew he would not have seen them as being at risk?
- b. 1000 yards is  $3/5^{\text{th}}$  of a mile; it is not only absurd, it is contrary to basic safety and human factors principles to suggest that prudent beach goes would perceive the water conditions so far away, much less to appreciate the hazard from such a distance.

**Opinion on Issue Six:** "The lifeguards were practicing proper scanning techniques as per recommendations made by the USLA."

- a. How can this be if WSO observed Mr. Laughlin from over 1000 yards away in an area Major Maceo claims was **not** to be guarded.
- b. How can this be if both the Toilet Bowl and Witches Brew were closed due to hazardous water conditions yet Mr. Powell and Mr. Laughlin supposedly swam over a 1000 yards to Toilet Bowl, then swam across the entire width of the bay to Witches Brew, yet neither men were noticed until Mr. Laughlin attempted his self-rescue.

**Summation:** "...an inference appears to the effect that OSLSD...had no protocol in place....to me, it is apparent that protocol existed....and was followed."

- a. Again Major Maceo's analysis is incomplete. Even if one assumes that there was a protocol and it was followed that still is not adequate.
- b. The protocol must be adequate to protect the public from known and foreseeable hazards. Even by Major Maceo's own analysis it is clear this was not the case.

**Summation:** "Questions concerning scanning techniques...repeatedly asked of all those deposed; and repeatedly answered the same."

- a. Not true; there are repeated examples of the WSOs contradicting each other.
- b. For example, on the critical issue of scanning, WSO Bregman testified that each tower was assigned a section of the bay to scan while WSO Moses testified they are not assigned specific areas and he scans the entire bay.

**Summation:** "The mere presence of lifeguards is in itself a risk management plan.....warning signs is another.....scheduling...also a true form of risk management."

- a. Having a risk management plan is not enough; the plan must be adequate.
- b. It is interesting to note the Major Maceo claims the presence of warning signs show that the City and County had a risk management program, even though he opines that a million signs would go unnoticed.

**Summation:** "There is a difference between closing a ledge, and closing an area of the ocean."

- a. Precisely; the City and County made a reasonable effort to close access to Witches Brew by the ledge (i.e. a barricade and warning signs that impeded access to the ledge by land).
- b. But the City and County made no effort to close access to Witches Brew via water. That is, despite some WSOs testimony that they had verbally warned via megaphone and/or intercepted via surfboard in the past, no one did so to save Mr. Powell and Mr. Laughlin.
- c. Worse yet, even after the fact, Major Maceo testified that if he had seen Mr. Powell and Mr. Laughlin swimming towards Witches Brew, he would not have perceived them to be at risk.

**Summation:** "...the conscious decision of Mr. Powell and Mr. Laughlin to enter rough and unknown waters..."

- a. There is absolutely no basis for such an opinion.
- b. This is not to say that Mr. Powell and Mr. Laughlin were forced or swept into Witches Brew; but there is no basis to opine that Mr. Powell and Mr. Laughlin knew they were entering rough, unknown, or dangerous waters. They were snorkeling in a park, with many other swimmers/snorkelers and multiple lifeguards. There is no reason to believe that they somehow knew or should have known of the conditions at Witches Brew, particularly since they were snorkeling (i.e. face down in the water much/most of the time).

**Interview with WSO Neves:** "...normal to see people going through the cut but not on a day like the one in question....not many people in the slot July 19, 2002...had been out on rescue board blocking the slot and warning people by turning them around....when asked if it was normal for people to venture that far out (as far as the areas where Powell and Laughlin were found), Neves replied that it wasn't."

- a. Such statements beg the question of why when both the Toilet Bowl and Witches Brew were closed, Mr. Powell and Mr. Laughlin swam such long distances but no actions were taken until Mr. Laughlin attempted a self-rescue.
- b. They are also contrary to Major Maceo's opinion that if he had seen Mr. Powell and Mr. Laughlin swimming towards Witches Brew he would not have perceived them at risk.

**Interview with WSO Neves:** "Neves state that Hanauma Bay has "...proud drowners, no signs of a struggle"."

- a. Yet even armed with this information from his own personal interview of one of Hanauma Bay's experienced WSOs, Major Maceo still opines that Mr. Powell and Mr. Laughlin, who were a 1000 yards out headed towards Witches Brew were not at risk since they were not showing any signs of distress.

Please let me know if you have any questions or if I can be of any further assistance. I look forward to continuing to work with you on this matter.

Sincerely,



Richard Gill, Ph.D., CHFP, CXL  
President and Chief Scientist

BENJAMIN J. CAYETANO  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

DIVISION OF STATE PARKS  
P. O. BOX 621  
HONOLULU, HAWAII 96809

December 19, 1996

CHAIRPERSON  
MICHAEL D. WILSON  
BOARD OF LAND AND NATURAL RESOURCES

DEPUTY DIRECTOR  
GILBERT S. COLOMA-AGARAN

AQUACULTURE DEVELOPMENT  
PROGRAM  
AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
CONSERVATION AND  
ENVIRONMENTAL AFFAIRS  
CONSERVATION AND  
RESOURCES ENFORCEMENT  
CONVEYANCES  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
LAND MANAGEMENT  
STATE PARKS  
WATER AND LAND DEVELOPMENT

**MEMORANDUM**

**TO:** Mr. Michael D. Wilson, Chairperson  
Board of Land and Natural Resources

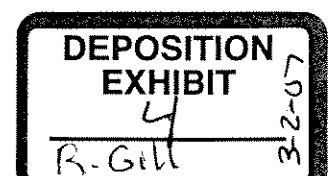
**FROM:** Ralston Nagata, Chairperson's Designee  
Task Force on Beach and Water Safety

**SUBJECT:** Design of Signs

The Task Force has completed its consultation on the design of signs to warn of 1) dangerous shorebreak and 2) strong current. We hereby submit both designs for your approval.

Color proofs of the designs, less than full-size, are enclosed and a narrative of the Task Force's consultive advice follows:

- 1) Install permanent warning signs at all State/County beach parks, regardless of being guarded or not, if there is a concern for strong current(s) and/or dangerous shorebreak(s).
- 2) Incorporate USLA/Hawaii Region symbols with copyright mark into signs where strong current(s) and/or dangerous shorebreak(s) are a concern.
- 3) Similarly, "strong current" and/or "dangerous shorebreak" labels must accompany symbols.
- 4) Upper portion of these signs to use the label "warning" in orange and black format, similar to design used by American National Standards Institute (ANSI).
- 5) Lower portion of sign to be white background.
- 6) Color of symbols to be black and yellow.
- 7) Sign face will not identify agency. Any agency identification and other agency markings to be placed on reverse side of sign.



- 2 -

- 8) Any appropriate material can be used as a sign backing. Also, symbols, background, and verbiage can be painted directly on backing or stuck on with adhesive.
- 9) Sign corners to be rounded to standard radius, as found on aluminum sign blanks.
- 10) Font for lettering shall be "Helvetica".
- 11) Only one symbol to be used per sign.
- 12) Task Force adopting only those ANSI elements that it feels necessary. Two or three levels of warning not considered for permanent sign; however, temporary augmentation signage may be considered later by the Task Force for guarded beaches.
- 13) Minimum language addressing three ANSI elements (nature of hazard, potential harm, avoidance) to be incorporated into permanent "strong current" and "dangerous shorebreak" signs.
- 14) Reflectivity of paint is not a design requirement.
- 15) Sign size to be 18" by 24".
- 16) Strong currents - adapt current USLA/Hawaii Region depiction but with arrows in both directions. Language agreed upon "You could be swept away from shore and could drown, if in doubt, don't go out".
- 17) Dangerous shorebreak - adapt current USLA/Hawaii Region but with low wave depiction; space between wave and body; standard water depiction. Language adjusted per discussion to read "waves break in shallow water, serious injuries could occur, even in small surf, if in doubt, don't go out".
- 18) Lettering sizes, as proportionally depicted in color proofs of designs. Letter size for risk avoidance and harm can be adjusted to fit available space for either sign. "If in doubt, don't go out" letter size should be consistent among signs, as would be the size of "warning", symbol, and hazard label.

Regarding your suggestion of a possible consultant to review our efforts, the Task Force believes a consultant to be unnecessary. Deputy Attorney General Charles Fell stated at the Task Force's November 7, 1996 meeting that the process calls for the collective expertise of the membership. Further, the Task Force members pointed out that within State of Hawaii, the usual expert witnesses on both sides of beach/water hazard court cases have been participating in the Task Force's meetings (Ralph Goto and Richard Grigg). The County representatives on the Task Force unanimously urge your expeditious review and approval of the designs.

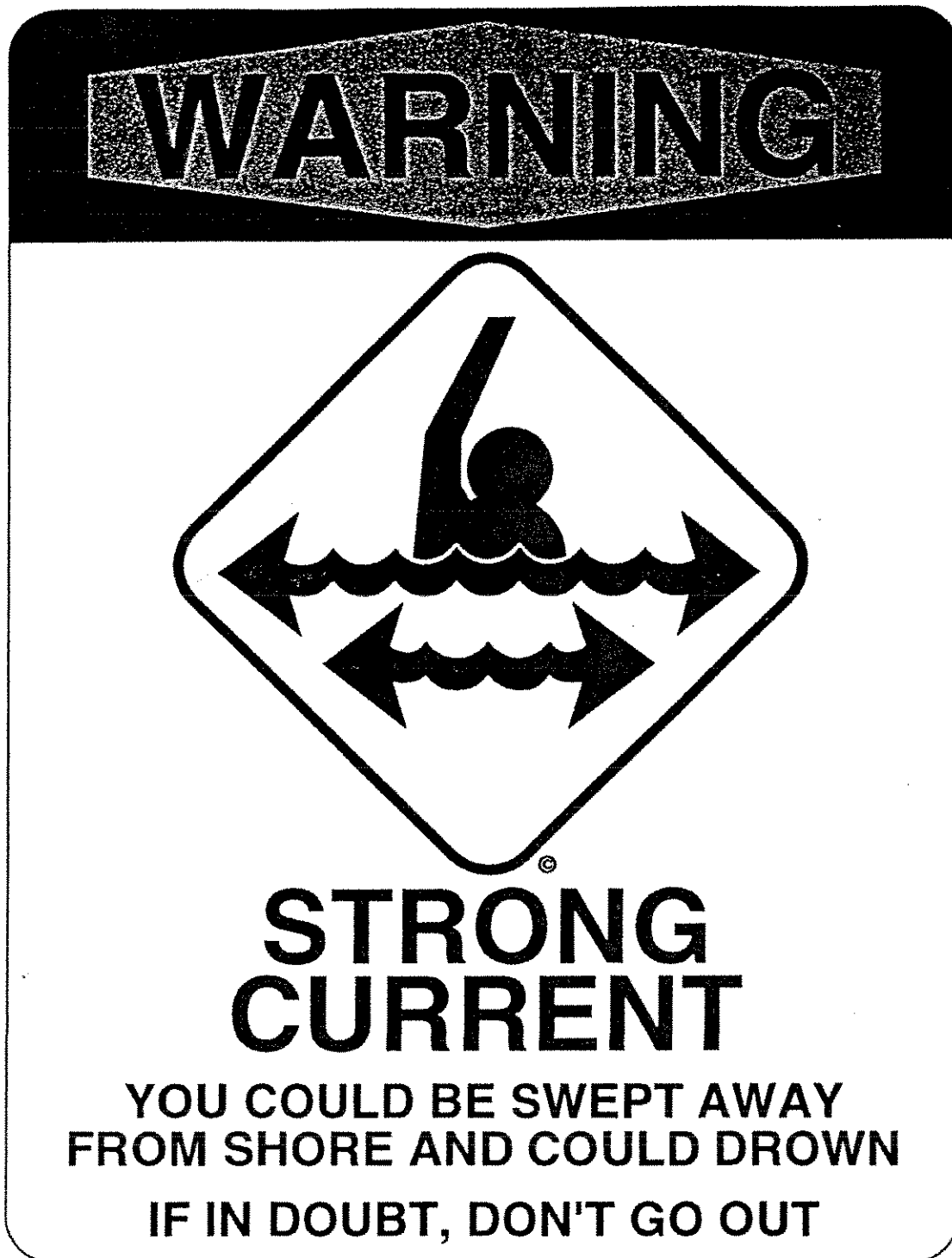
- 3 -

Regarding your later approval of the placement of these signs, the Task Force intends to prepare placement guidelines and each park agency would subsequently provide sign location maps with a short narrative description. Supporting photograph or video documentation of location will minimally be retained by each agency.

APPROVE/DISAPPROVE DESIGN OF DANGEROUS—  
SHOREBREAK AND STRONG CURRENT SIGNS:

  
\_\_\_\_\_  
MICHAEL D. WILSON

cc Task Force Members  
Mr. James Yamamoto  
Mr. Gilbert Coloma-Agaran  
Mr. Charles Fell



*Refer to colored  
version used for  
May 27 slide show*

# WARNING



## DANGEROUS SHOREBREAK

WAVES BREAK IN SHALLOW WATER  
SERIOUS INJURIES COULD OCCUR, EVEN IN SMALL SURF  
IF IN DOUBT, DON'T GO OUT

*Refer to colored  
version - wave form  
may slide down*

December 19, 1996

**MEMORANDUM**

**TO:** Mr. Michael D. Wilson, Chairperson  
Board of Land and Natural Resources  
/s/ RALSTON NAGATA

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Task Force on Beach and Water Safety

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MICHAEL D. WILSON

cc Task Force Members  
Mr. James Yamamoto  
Mr. Gilbert Coloma-Agaran  
Mr. Charles Fell

RN:js

